CLAIMS:

1. An optical transmission apparatus comprising:

an array of lasers;

an optical output; and

an array of mirrors, each mirror being movable such that light from a laser from the array of lasers directed to a mirror of the array of mirrors is directed to the optical output.

2. The optical transmission apparatus of claim 1 further comprising an array of positioning elements, each positioning element coupled to a corresponding mirror of the array of mirrors.

3. The optical transmission apparatus of claim 2 wherein each positioning element is configured to move the corresponding mirror from a first position to a second position and from the second position to the first position.

4. The optical transmission apparatus of claim 3 wherein a mirror in the second position directs light from a laser to the optical output.

5. The optical transmission apparatus of claim 4 wherein only one mirror of the array of mirrors is in the second position when light is directed to the optical output.

6. The optical transmission apparatus of claim 4 wherein a mirror in the first position does not direct light to the optical output

7. The optical transmission apparatus of claim 2 wherein the positioning element comprises an actuator and a spring

8. The optical transmission apparatus of claim 7 wherein each spring is configured to move a mirror from a first position to a second position and each actuator is configured to move the mirror from the second position to the first position.

9. The optical transmission apparatus of claim 8 wherein the mirror in the second position directs light from a laser to the optical output.

10. The optical transmission apparatus of claim 9 wherein only one mirror of the array of mirrors is in the second position when light is directed to the optical output.

11. The optical transmission apparatus of claim 9 wherein a mirror in the first position does not direct light to the optical element.

12. An optical transmission apparatus comprising:

an array of lasers;

a lens collimating light from a laser in the array of lasers;

an optical output; and

a moveable mirror, the mirror being moveable to receive the light collimated by the lens from any of a plurality of lasers in the array of lasers, the mirror reflecting the light back to the lens, which passes the light to the optical output

13. The optical transmission apparatus of claim 12 wherein the mirror is movable about an axis perpendicular to the array of lasers.

14. The optical transmission apparatus of claim 13 wherein the lens is fixed.

15. The optical transmission apparatus of claim 12 wherein the optical output comprises a fiber.

16. The optical transmission apparatus of claim 12 wherein the optical output is adjacent the array of lasers.

17. The optical transmission apparatus of claim 12 wherein the array of lasers has an emitting end from which light is emitted and the optical output has a receiving end in which reflected light is directed into, such that the receiving end of the optical output and the emitting end of the array of lasers face in substantially the same direction.

18. An optical transmission apparatus comprising:

an array of lasers;

an optical output; and

a mirror positionable to reflect light at normal incidence from any one of a plurality of lasers in the array of lasers to the optical output.

19. The optical transmission apparatus of claim 18 wherein the mirror is movable about an axis perpendicular to the array of lasers.

20. The optical transmission apparatus of claim 18 wherein the optical output comprises a fiber.

21. The optical transmission apparatus of claim 20 further comprising a lens directing light into the fiber.

22. The optical transmission apparatus of claim 20 wherein the optical output is adjacent the array of lasers.

23. The optical transmission apparatus of claim 21 wherein the array of lasers has an emitting end from which light is emitted and the fiber has a receiving end in which reflected light is directed into, such that the receiving end of the fiber and the emitting end of the array of lasers both face in substantially the first direction.

24. An optical transmission apparatus comprising:

an array of lasers, each laser angled relative to each other;

a collimating lens positioned to collimate light from the lasers in the array of lasers; and

an optical element positionable to receive the collimated light from any one of a plurality of lasers in the array lasers and laterally shift the collimated light to fall upon a focusing lens, the focusing lens focusing the collimated light into an optical output path.

25. The optical transmission apparatus of claim 24 wherein the optical element is rotatable about an axis perpendicular to the array of lasers.

26. The optical transmission apparatus of claim 24 wherein the optical element is a solid high index block.

27. The optical transmission apparatus of claim 24 wherein the optical element comprises a first mirror and a

second mirror, both mirrors having a fixed angled in the same direction.

28. The optical transmission apparatus of claim 27 wherein both mirrors are rotatable about an axis perpendicular to the array of lasers.

29. The optical transmission apparatus of claim 28 wherein both mirrors rotate simultaneously.

30. The optical transmission apparatus of claim 26 wherein the optical element is laterally movable in a direction perpendicular to the array of lasers.

31. The optical transmission apparatus of claim 26 wherein the optical element shifts the light from the lens to compensate for the light being shifted by the angle of the lasers of the array of lasers.

32. An optical transmission apparatus comprising:

an array of lasers;

an optical output path for receiving light from a laser in the array of lasers; and

an moveable optical element with a portion of volume in the optical element evacuated to form a first reflective surface and a second reflective surface, the optical element moveable to reflect light from any one of a plurality of lasers in the array of lasers from the first reflective surface to the second reflective surface to the optical output path.

33. The optical transmission apparatus of claim 32 wherein the optical element is moveable in a direction substantially perpendicular to the array of lasers.

34. The optical transmission apparatus of claim 33 further comprising a focusing lens, the focusing lens directing light to an optical output in the optical output path.

35. The optical transmission apparatus of claim 34 wherein the optical output is a fiber.

36. The optical transmission apparatus of claim 35 wherein the optical element is translatable in a direction substantially perpendicular to the fiber.

37. The optical transmission apparatus of claim 36 wherein the number of lasers in the array of lasers is proportional to lengths of the first and second reflective surfaces.

38. The optical transmission apparatus of claim 36 wherein the first and second reflective surfaces each have a length that is proportional to length of the array of lasers.

39. The optical transmission apparatus of claim 38 wherein the optical element is rotatable around an axis in which the optical element translates.

40. An optical transmission apparatus comprising:

an array of lasers;

a focusing lens;

a movable platform; and

a first mirror and a second mirror coupled to the movable platform, the first and second mirror being separated and angled in opposite directions relative to each other, such that the first mirror reflects light from at least one laser

from the array of lasers to the second mirror that reflects light to a focusing lens.

41. The optical transmission apparatus of claim 40 wherein the first mirror is translatable in a first direction.

42. The optical transmission apparatus of claim 41 wherein the first direction is substantially perpendicular to the array of lasers.

43. The optical transmission apparatus of claim 40 wherein the second mirror is translatable in a first direction.

44. The optical transmission apparatus of claim 43 wherein the first direction is substantially perpendicular to the array of lasers.

45. An optical transmission apparatus comprising:

an array of lasers;

a lens; and

an optical element with two opposite sloped sides, such that one side reflects light from at least one laser from the array of lasers to another side that reflects light to the lens.

46. The optical transmission apparatus of claim 45 wherein the optical element comprises a prism.

47. The optical transmission apparatus of claim 46 further comprising an array of lenses, each lens in the array of lenses corresponding to each laser in the array of lasers;

48. The optical transmission apparatus of claim 45 wherein the sides are sloped in opposite directions of each other.

49. An optical transmission apparatus comprising:
an array of lasers;
an optical output; and
an arrayed waveguide grating coupling light from a laser in the array of lasers to the optical output.

50. The optical transmission apparatus of claim 49 wherein the arrayed waveguide grating includes an input coupler, an array of waveguide elements, and an output coupler, the input coupler coupling light from the lasers in the array of lasers to a corresponding waveguide element of the arrayed waveguide grating, and the output coupler coupling light from the waveguide elements to the optical output.

51. The optical transmission apparatus of claim 50 wherein the waveguide elements form a grating.

52. The optical transmission apparatus of claim 51 wherein the grating comprises a plurality of unequal length waveguides.

53. The optical transmission apparatus of claim 49 wherein the lasers together provide a plurality of communication channels for a dense wavelength division multiplex communications system.

54. The optical transmission apparatus of claim 53 wherein each of the lasers in the array of lasers includes an electroabsorption modulator allowing for a data signal to be heterodyned with the optical signal generated by the lasers.

55. An optical transmission apparatus comprising:

an array of lasers;

an optical output; and

a slidable waveguide section containing a plurality of curved waveguides positionable such that light generated by a laser in the array of lasers is coupled by one of the plurality of waveguides to the optical output.

56. The optical transmission apparatus of claim 55 wherein the lasers in the array of lasers lie in a plane;

the waveguide elements contained in the slidable waveguide lie in a plane adjoining the plane formed by the lasers; and

the slidable waveguide is translatable in the plane formed by the waveguide elements in a direction perpendicular to the light generated by the lasers.

57. The optical transmission apparatus of claim 56 wherein the waveguide elements are positioned in the plane of the slidable waveguide such that a first laser of the array of lasers is coupled to the optical output when the slidable waveguide is in a first position, and a second laser of the array of lasers is coupled to the optical output when the slidable waveguide is in a second position.

58. An optical transmission apparatus, comprising:

an array of lasers;

a lens positioned to focus an optical beam from the array of lasers; and

an optical element positionable to receive the focused optical beam from one of the array of lasers and to direct the focused optical beam into an optical output path.

59. The optical transmission apparatus of Claim 58, wherein the optical element is a moveable mirror, the lens has a back focal plane, and the mirror is disposed in the back focal plane of the lens.

60. The optical transmission apparatus of Claim 58, wherein an optical axis of the focused beam of light is substantially parallel to an optical axis of the optical output path.

61. An optical transmission apparatus, comprising:

an array of lasers;

a collimating lens positioned to collimate an optical beam from the array of lasers;

an optical deflector positionable to receive the collimated optical beam from one of the array of lasers, the deflector shifting the collimated optical beam responsive to a predetermined voltage applied thereto and forming a shifted collimated optical beam; and

a focusing lens positioned to receive the shifted collimated optical beam and to direct the focused optical beam into an optical output path.

62. The optical transmission apparatus of Claim 61, wherein the optical deflector is one of an electro-optical deflector and an acousto-optical deflector.